

CURRICULUM VITAE**Name:** Saeed Ur Rahman**Address:** Department of Oral Biology,
Institute of Basic Medical Sciences,
Khyber Medical University, Pakistan.
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saeedb80@gmail.com**Employment History:**

2025-current Associate Professor, Khyber Medical University, Peshawar, Pakistan
2021-2025 Assistant Professor, Khyber Medical University, Peshawar, Pakistan
2018-2021 Assistant Professor, COMSATS University Islamabad, Pakistan
2019-2020 Adjunct Faculty, University of Health Sciences, Lahore, Pakistan
2016-2018 Postdoctoral Associate, Oral Biology, SUNY, Buffalo, NY, USA
2010-2015 Research Assistant & Postdoctoral Research Assistant, Seoul National University
2009-2010 Research Assistant, Dental Research Institute, Seoul National University, South Korea
2006-2007 Lecturer in Biochemistry, Hazara University, Mansehra, Pakistan

Education:

2015 Doctorate (Ph.D.), Dentistry (Dental Science), Seoul National University, South Korea
2009 Doctoral Studies, Coursework completed (Biomedical Science), Hallym University
2006 Master of Philosophy (M.Phil.) in Biochemistry/Molecular Biology, Quaid-I-Azam University
2003 Masters in Biological Sciences (M.Sc.), Quaid-I-Azam University, Pakistan
2025 Certificate, Health Professions Education, Khyber Medical University, Pakistan
2017 Certificate, Associate Level Certification, University at Buffalo, USA
2000 Bachelor in Science (BS), Peshawar University, Pakistan

Honors and Awards

2023-24 Best Teacher Award, Quality Enhancement Cell, Khyber Medical University
2021-22 Best Teacher Award, Quality Enhancement Cell, Khyber Medical University
2017 1st place in Post-Doctoral Research Award at Roswell Park Cancer Institute, USA
2017 Postgraduate Best Research Award, School of Dental Medicine, SUNY, Buffalo, USA
2013 Best Poster Presentation Award, Brain Korea-21 Annual Conference, South Korea
2012 Best Oral Presentation Award, Conference on Trends in Biochemistry and Molecular Biology, Islamabad, Pakistan
2011 Best Poster Presentation Award, Brain Korea-21 Annual Conference, Seoul National University, South Korea
2010 Superior Academic Performance Award, Dental Research Institute, Seoul National University, South Korea

Fellowships & Scholarships

- 2025 Brain Pool Fellowship (Overseas Scientist), NRF Korea — Awarded (2025), not initiated (visa delay)
- 2018 Travel grant for 38th ASLMS Annual Conference, Dallas, USA
- 2009-2015 Research and Brain Korea-21 scholarship, Dental Research Institute, Seoul National University, South Korea
- Lecture & Research Scholarship (2009-2010)
 - Brain Korea 21 (2010)
 - Superior Academic Performance (2010)
 - Lecture & Research Scholarship (2011)
 - Brain Korea 21 (2012)
 - Lecture & Research Scholarship (2013-2014)

Membership in Professional Societies

Society of Biomaterials (SFB)

American Society for Lasers in Medicine and Surgery (ASLMS)

International and American Association of Dental Research (IADR & AADR)

Editorial Responsibilities (*select*)

2025- *current* Editorial Board, MarineMedicine

2024- *current* Editorial Board, Advances In Basic Medical Sciences

2017- *current* Editorial Board, Oral Health and Dental Studies

Reviewer (*select*)

2026- Advanced Healthcare Materials

2024- BMC Molecular and Cell Biology

2024- Biomaterials Research

2023- BMC Oral Health

2022- Acta Biomaterialia

2021- PLOS One

2020- BIOSCIENTIFIC REVIEW

2019- Scientific Reports journal

2017- Lasers In Medical Science

2018- American Society for Laser Medicine and Surgery

2018- PeerJ journal

Service Activities

2024-present Focal Person, Quality Enhancement Cell (QEC), IBMS, Khyber Medical University

2023-present Member, Intellectual Property (IP) Management Committee, KMU

2021-present Member, Graduate Studies Committee (GSC), Khyber Medical University

2021-2023 *In-charge Molecular Biology Lab*, Public Health Reference Laboratory (PHRL)

2020-2021 *Consultant*, Public Health Reference Laboratory (PHRL), KP, Pakistan

2021-2023 *Consultant*, OptiMed Technology Inc., Buffalo, New York 14214, USA

2018-2021 *Senior Lab-Incharge*, Animal House Facility, COMSATS University

Grant Funding

1. Directorate General of Science & Technology, Patenting and Prototyping Support Program. Enhancing Oral Wound Healing through Drug-Loaded Mucoadhesive Patches: Prototype Optimization, 2025-2026. Role as a PI, Grant amount: Rs. 1.0 Million.
2. Higher Education Commission, NRPU research grants. Smart-Nanofibrous 3D Scaffold System for the Alveolar Bone Regeneration to Market for Patient Care, 2022-2025. Role as a PI, Grant

amount: Rs. 11.06 Million.

3. Faculty Research Grant, Khyber Medical University, Spatial and Temporal Smart Nanofibrous Scaffold System for Bone Tissue Regeneration using In-vitro Model, 2021-2022. Role as a PI, Grant amount: Rs. 500000.
4. Shanghai “Science, Technology and Innovation Action Plan” grant International Academic Exchange and Cooperation Programme, 2020-2022. Role as a Co-PI, grant amount: RMB. 300000.

Inventions and Patents

1. Materials and methods for drug-induced gingival overgrowth (PCT/US17/609,272 filed 07/05/2020)
2. Functionalized prosthetic interfaces for the prevention and treatment of dental conditions (PCT/US17/437,187 filed 09/03/2020)
3. Mucoadhesive Therapeutic Patch for treating Oral Ulcers and Preparation Method Thereof (PK 340/2024 filed 29/05/2024)
4. Topical Gel and Patch Formulation containing Bioactive Agents for Treating Acute and Chronic Wound Healing and Preparation Method Thereof (PK 666/2026 filed 27/07/2026)

Invited Presentations

- 2026 Dow Dental College, Karachi, Pakistan
2025 Dow Dental College, Karachi, Pakistan
2024 Institute of Space Technology, Islamabad, Pakistan
2023 American Fertility Centers (AFC), Peshawar, Pakistan
2022 Institute of Space Technology Islamabad, Pakistan
2019 The University of Lahore, Lahore, Pakistan
2017 The Aga Khan University, Karachi, Pakistan
2016 University of Health Sciences, Lahore, Pakistan

Postgraduate Students (MS/MPhil/PhD) Supervision (Awards)

- 2026 Rimsha Razzak, MPhil thesis, Khyber Medical University, Pakistan
2026 Mariam Amir, MPhil thesis, Khyber Medical University, Pakistan
2026 Omair Khitab, MPhil thesis, Khyber Medical University, Pakistan
2026 Maham Barkat, MPhil thesis, Khyber Medical University, Pakistan
2025 Abdul Ahad, MPhil thesis, Khyber Medical University, Pakistan
2024 Shazia Hameed, MPhil thesis, Khyber Medical University, Pakistan
2024 Sajida Farid, MPhil thesis, Khyber Medical University, Pakistan
2024 Shahwar Siddiq, MPhil thesis, Khyber Medical University, Pakistan
2022 Ambreen, MPhil thesis, Khyber Medical University, Pakistan
2020 Farkhanda Sadaf, MPhil thesis, The University of Lahore, Pakistan
2020 Mizna Javed, MPhil thesis, The University of Lahore, Pakistan
2019 Maria Akhtar, MPhil thesis, The University of Lahore, Pakistan
2018 Nadia Tabassum, MPhil thesis, University of Health Sciences, Pakistan

Courses taught to Graduate Students

- Introduction to Biosciences, COMSATS University, Pakistan (2018-2023).
- Introduction to Oral Biology, Khyber Medical University (2020-present)
- Tissue Engineering, Khyber Medical University (2020-present)
- Advances in Molecular Cell Biology, Khyber Medical University (2021, present)

- Health Research, Khyber Medical University (2021- present)
- Oral and Dental Hard Tissue Engineering, Khyber Medical University (2021- present)
- Oral and Dental Soft Tissue Engineering, Khyber Medical University (2021- present)
- Tissue Engineering Strategies, Khyber Medical University (2021- present)

Bibliography

Research Articles (Peer-reviewed)

1. Uddin MK, Khan A, Mirani ZA, **Rahman SU**, Murtaza A, Mirza MR, Naseem A, Aziz SM. Effects of cleaning agents and Candida Biofilms on dental resin integrity. *Journal of Taibah University Medical Sciences*. 2026 Aug 1;21(4):611-9.
2. Babar BZ, Khan MA, Liaqat S, Khan A, **Rahman SU**, Feroz S, Muhammad N. Development of chitosan-selenium nanoparticle modified brushite cement: A potential strategy for improved clinical performance in bone regeneration. *Bio-Medical Materials and Engineering*. 2026 Feb 17:09592989261420547.
3. Babar BZ, Khan MA, Liaqat S, Sharif F, **Rahman SU**, Feroz S, Muhammad N. Incorporation of MXene into brushite cement: Effects on mechanical, physical, and biological properties. *Journal of Applied Biomaterials & Functional Materials*. 2026 Apr;24:22808000261426769.
4. Ponnusamy S, Amin M, Bhat A, Garczynski S, **Rahman SU**, Rasam S, Govindool SR, Khan I, Arany P. Photobiomodulation Activates Coordinated Signaling Networks to Modulate Inflammation, Adaptive Stress, and Tissue Healing via Redox-Mediated NF κ B–TGF- β 1–ATF-4 Axis. *Cells*. 2026 Jan 5;15(1):88.
5. Desai KM, Tadkalkar NA, Amin M, Kumar R, **Rahman SU**, Ponnusamy S, Angadi P, Liu W, Dayani RV, Kale AD, Slone J. TGF- β 1 Directs TFAM-Mediated Mitochondrial Reprogramming in Oral Submucous Fibrosis. *Journal of Dental Research*. 2025 Dec 9:00220345251394281.
6. Hameed S, **Rahman SU**, Konain K, Samie M, Farid S, Elango J, Habib SR, Woo KM, Arany PR. Advanced 3D biomimetic scaffolds with bioactive glass and bone-conditioned medium for enhanced osteogenesis. *Biomaterials Advances*. 2025 Mar 9:214282.
7. Konain K, Farid S, Hameed S, Rehman F, Samie M, Sharif F, Zaman M, Habib SR, Elango J, **Rahman SU**. Arabinoxylan-Incorporated Poly (ϵ -caprolactone) Nanofiber Matrix Promote Fibroblast Cells Adhesion and Proliferation. *BioNanoScience*. 2025 Jun;15(2):309.
8. Khan R, Haider S, Wahit MU, **Rahman SU**, Hameed S, Haider A, Aqif M, Bukhari IA, Abd Razak SI. Preparation of amine-functionalized polyacrylonitrile-TiO₂-chitosan multilayer nanofibers as a potential wound dressing: Characterization and investigation of in vitro cell viability, proliferation and antibacterial study. *International Journal of Biological Macromolecules*. 2025 Feb 12:141006.
9. Yaqoob Z, Batool SA, Basit MA, Konain K, Malik RA, **Rahman SU**, Husain SW, Alrobei H, Rehman MA. Hydrothermal synthesis of carbon dots incorporated in magnetite iron oxide nanoparticles for potential targeted brain cancer therapy: In-Vitro Study. *Materials Chemistry and Physics*. 2024 Jul 10:129698.
10. Hassan H, Mirza MR, Jabeen A, Alam M, Kori JA, Sultan R, **Rahman SU**, Choudhary MI. Yellow scorpion (*Buthus sinidicus*) venom peptides induce mitochondrial-mediated apoptosis in cervical, prostate and brain tumor cell lines. *Plos one*. 2024 Feb 23;19(2): e0296636.
11. Hou C, Lei Y, Li N, Wei M, Wang S, **Rahman SU**, Bao C, Bao B, Elango J, Wu W. Collagen from Iris squid grafted with polyethylene glycol and collagen peptides promote the proliferation of fibroblast through PI3K/AKT and Ras/RAF/MAPK signaling pathways. *International Journal of Biological Macromolecules*. 2023 Aug 30; 247:125772.
12. Konain K, Saddique N, Samie M, Rahman ZU, Farid S, Hameed S, Mirza MR, Wu W, Woo KM, Arany PR, **Rahman SU**. Curcumin-Loaded Nanofibrous Matrix Accelerates Fibroblast

- Cell Proliferation and Enhances Wound Healing via GSK3- β Inhibition. *Journal of Composites Science*. 2023 Aug 21;7(8):343.
13. Tabassum N, Khalid S, Ghafoor S, Woo KM, Lee EH, Samie M, Konain K, Ponnusamy S, Arany PR, **Rahman SU**. Tideglusib-incorporated nanofibrous scaffolds potently induce odontogenic differentiation. *Journal of Biomaterials Applications*. 2023, 38, 280–291.
 14. Samie M, Khan AF, **Rahman SU**, Iqbal H, Yameen MA, Chaudhry AA, Galeb HA, Halcovitch NR, Hardy JG. Drug/bioactive eluting chitosan composite foams for osteochondral tissue engineering. *International Journal of Biological Macromolecules*. 2023 Feb 28; 229:561-74.
 15. **Rahman SU**, Kim WJ, Chung SH, Woo KM. Nanofibrous topography-driven altered responsiveness to Wnt5a mediates the three-dimensional polarization of odontoblasts. *Materials Today Bio*. 2022 Nov 2:100479.
 16. Masood F, Makhdoom MA, Channa IA, Gilani SJ, Khan A, Hussain R, Batool SA, Konain K, **Rahman SU**, Wadood A, bin Jumah MN. Development and Characterization of Chitosan and Chondroitin Sulfate Based Hydrogels Enriched with Garlic Extract for Potential Wound Healing/Skin Regeneration Applications. *Gels*. 2022 Oct 20;8(10):676.
 17. Ponnusamy S, Ali HH, Dutt F, **Rahman SU**, Salah AA, Pipalia M, Baier RE, Arany PR. Redox signaling induces laminin receptor ribosomal protein-SA expression to improve cell adhesion following radiofrequency glow discharge treatments. *Scientific reports*. 2022 May 11;12(1):1-1.
 18. Hou C, Li N, Liu M, Chen J, Elango J, **Rahman SU**, Bao B, Wu W. Therapeutic Effect of Nile Tilapia Type II Collagen on Rigidity in CD8+ Cells by Alleviating Inflammation and Rheumatoid Arthritis in Rats by Oral Tolerance. *Polymers*. 2022 Mar 22;14(7):1284.
 19. **Rahman SU**, Ponnusamy S, Nagraath M, Arany PR. Precision-engineered niche for directed differentiation of MSCs to lineage-restricted mineralized tissues. *Journal of Tissue Engineering*. 2022 Feb; 13:20417314211073934.
 20. Raza M, Sultan R, Choudhary MI, Tahir M, Larsen MR, Tariq S, **Rahman SU**. Label-free Quantitation of the Changes in Salivary Proteome associated with the Chronic Consumption of the Betel nut (Areca Catechu). *Molecular Omics*. 2022.
 21. Akhtar M, Woo KM, Tahir M, Wu W, Elango J, Mirza MR, Khan M, Shamim S, Arany PR, **Rahman SU**. Enhancing osteoblast differentiation through small molecule-incorporated engineered nanofibrous scaffold. *Clinical Oral Investigations*. 2022 Mar;26(3):2607-18.
 22. Liu C, Shao H, Li D, Sui X, Liu N, **Rahman SU**, Li X, Arany PR. Safety and Efficacy of Citric Acid-Upconverting Nanoparticles for Multimodal Biological Imaging in BALB/c mice. *Photodiagnosis and Photodynamic Therapy*. 2021 Aug 17:102485.
 23. Khan I, **Rahman SU**, Tang E, Engel K, Hall B, Kulkarni AB, Arany PR. Accelerated burn wound healing with photobiomodulation therapy involves activation of endogenous latent TGF- β 1. *Scientific reports*. 2021 Jun 28;11(1):1-5.
 24. Zaman M, Saeed S, Imtiaz Bajwa R, Shafeeq Ur Rahman M, **Rahman SU**, Jamshaid M, Rasool MF, Majeed A, Imran I, Alqahtani F, Alshehri S. Synthesis and Evaluation of Thiol-Conjugated Poloxamer and Its Pharmaceutical Applications. *Pharmaceutics*. 2021 May;13(5):693.
 25. Nagraath M, Yazdi AR, Rafferty A, Daly D, **Rahman SU**, Gallant RC, Ni H, Arany PR, Towler MR. Tantalum-containing meso-porous glass fibres for hemostatic applications. *Materials Today Communications*. 2021 Jun 1; 27:102260.
 26. Wang R, Bao B, Bao C, Wang S, **Rahman SU**, Hou C, Elango J, Wu W. Resveratrol and celastrol loaded Collagen dental implants regulate periodontal ligament fibroblast growth and osteoclastogenesis of bone marrow macrophages. *Chemistry & Biodiversity*. 2020 Aug 7.
 27. Mane DR, **Rahman SU**, Desai KM, Kale AD, Bhat KG, Arany PR. Roles of the matricellular protein Tenascin-C in T-lymphocyte trafficking and etiopathogenesis of Oral

- Lichen Planus. *Archives of oral biology*. 2020 Feb 1; 110:104622.
28. Elango J, **Rahman SU**, Henrotin Y, de Val JE, Bao B, Wang S, Li B, Wu W. Parathyroid Hormone-Related Protein (PTHrP) Accelerates Soluble RANKL Signals for Downregulation of Osteogenesis of Bone Mesenchymal Stem Cells. *Journal of clinical medicine*. 2019 Jun;8(6):836.
 29. Tariq S, Rahim A, Muhammad N, **Rahman SU**, Azhar U, Sultana K, Sharif F, Siddiqi SA, Zaman M, Rehman F. Controllable delivery from gentamicin loaded polycaprolactone/grafted silica nanoparticles composite mats. *Journal of Molecular Liquids*. 2019 Jun 18;111205.
 30. Elango J, Saravanakumar K, **Rahman SU**, Henrotin Y, Regenstein JM, Wu W, Bao B. Chitosan-Collagen 3D Matrix Mimics Trabecular Bone and Regulates RANKL- Mediated Paracrine Cues of Differentiated Osteoblast and Mesenchymal Stem Cells for Bone Marrow Macrophage-Derived Osteoclastogenesis. *Biomolecules*. 2019 May;9(5):173.
 31. Khaliq A, **Rahman SU**, Gul S, Rehman ZU, Khan MA, Shaheryar ZA, Zaman M, Zaidi AA. Emerging antimicrobial resistance causing therapeutic failure in neonatal Sepsis. *Biocatalysis and agricultural biotechnology*. 2019:101233.
 32. **Rahman SU**, Oh JH, YD Cho, WJ Yoon, Yu FH, Baek JH, Ryoo HM, Woo KM. Fibrous topography-potentiated canonical Wnt signaling directs the odontoblastic differentiation of dental pulp-derived stem cells. *ACS Applied Materials & Interfaces* 2018.
 33. Nagraath M, Sikora A, Graca J, Chinnici JL, **Rahman SU**, Reddy SG, Ponnusamy S, Maddi A, Arany PR. Functionalized prosthetic interfaces using 3D printing: Generating infection-neutralizing prosthesis in dentistry. *Materials Today Communications*. 2018.
 34. Park CH, Oh JH, Jung HM, Choi Y, **Rahman SU**, Kim S, Kim TI, Shin HI, Lee YS, Frank HY, Baek JH. Effects of the incorporation of ϵ -aminocaproic acid/chitosan particles to fibrin on cementoblast differentiation and cementum regeneration. *Acta Biomaterialia*. 2017.
 35. **Rahman SU**, Park CH, Baek JH, Ryoo HM, Woo KM. Fibrin-Enhanced Canonical Wnt Signaling Directs Plasminogen Expression in Cementoblasts. *International Journal of Molecular Sciences*. 2017; 18:2380.
 36. Woo KM, Jung HM, Oh JH, **Rahman SU**, Kim SM, Baek JH, Ryoo HM. Synergistic effects of dimethyloxalylglycine and butyrate incorporated into α -calcium sulfate on bone regeneration. *Biomaterials*. 2015 Jan; 39:1-14. doi: 10.1016/j. Biomaterials.
 37. **Rahman SU**, Lee MS, Baek JH, Ryoo HM, Woo KM. The prolyl hydroxylase inhibitor dimethyloxalylglycine enhances dentin sialophosphoprotein expression through VEGF-induced Runx2 stabilization. *PLoS One*. 2014 Nov 4;9(11): e112078.

Reviews and Editorials (Peer-reviewed)

1. Kamran S, Reza N, Berahim Z, **Rahman SU**, Abdullah JY. Fibrotic–Angiogenic Signaling Networks in Oral Submucous Fibrosis: Pathobiology and Therapeutic Targeting. *International Journal of Molecular Sciences*. 2026 Aug 12;27(16):7204.
2. Amir M, Jeevithan L, Barkat M, Fatima SH, Khan M, Israr S, Naseer F, Fayyaz S, Elango J, Wu W, Val JE, **Rahman SU**. Advances in Regenerative Dentistry: A Systematic Review of Harnessing Wnt/ β -Catenin in Dentin-Pulp Regeneration. *Cells*. 2024 Jan;13(13):1153.
3. Rahman SU. 3D and 4D Printing for Tissue Engineering and Regenerative Medicine. *Advances in Basic Medical Sciences*. 2022 Jul 29;6(1):1-2.
4. Khorsandi K, Hosseinzadeh R, Sadat Esfahani H, Keyvani-Ghamsari S, **Rahman SU**. Nanomaterials as drug delivery systems with antibacterial properties: current trends and future priorities. *Expert review of anti-infective therapy*. 2021 May 8:1-25.
5. Ahmed A, Sarwar S, Hu Y, Munir MU, Nisar MF, Ikram F, Asif A, **Rahman SU**, Chaudhry AA, Rehman IU. Surface modified polymeric nanoparticles for drug delivery to cancer cells.

Expert Opinion on Drug Delivery. Sep 2020.

6. **Rahman SU**, Nagrath M, Ponnusamy S, Arany PR. Nanoscale and Macroscale Scaffolds with Controlled-Release Polymeric Systems for Dental Craniomaxillofacial Tissue Engineering. "*Materials*" 2018.
7. **Rahman SU**, Mosca RC, Govindool Reddy S, Nunez SC, Andreana S, Mang TS, Arany PR. Learning from clinical phenotypes: Low-dose biophotonics therapies in oral diseases. *Oral diseases*. 2018 Mar 1;24(1-2):261-76.
8. **Rahman SU** & Arany PR. 3D bioprinting: prostheses–restorations... now, tissues and organ systems!" *Oral Diseases*. 2017; 23:404-8.

Book Chapters

1. Akhtar MH, Hussain S, **Rahman SU**, Mir TA, Yu C. Synthetic strategies of protein–metal nanomaterials as photonanomedicine agents. In *Organic Nanomaterials for Cancer Photothranostics* 2024 Jan 1 (pp. 123-140). *Woodhead Publishing*.
2. **Rahman SU**. Hydroxyapatite and tissue engineering. In *Handbook of Ionic Substituted Hydroxyapatites* 2020 Jan 1 (pp. 383-400). *Woodhead Publishing*.
3. Khan I, Ponnusamy S, **Rahman SU**, Giubellino A, Arany PR. Co-opting Developmental Signaling Pathways to Promote Wound Healing. *Springer, Cham* (2018): 1-12